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Response to Office Action Dated 11/21/2003

**REMARKS**

In view of the following remarks, Applicant respectfully requests reconsideration and allowance of the subject application.

**§102 Rejections**

Claims 1-22 are rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Yang et al. (5,819,286) (hereinafter "Yang"). Applicant respectfully traverses the rejection.

Yang teaches a system for indexing video clips by identifying symbols of graphical icons in each video frame and storing the horizontal, vertical and temporal coordinates of each symbol in a database. Yang's system permits querying the database by converting iconic queries into strings and executing the queries against the database. (Abstract; col. 4, lines 1-5 and 54-56). "For instance, a video query may be devised to identify a video clip in which a first group of symbols appear in a first frame and a second group of symbols appear in a later frame". (col. 4, lines 56-59).

Applicant's claim 1 recites in part:

a horizontally linked list linking at least a subset of the plurality of entities in at least a descending rank order direction, *each entity in the horizontally linked list having a unique rank as compared to the ranks of other entities in the horizontally linked list;*

(emphasis added).

The Office refers to col. 10, line 10 through col. 11, line 39 to support the assertion that Yang teaches this recited element of claim 1. However, Yang does not teach "each entity in the horizontally linked list having a unique rank as

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1 compared to the ranks of other entities in the horizontally linked list". This is  
2 clear from Figures 12 and 13 of Yang. Both Figures 12 and 13 illustrate the  
3 following string of "icon designators" in the horizontal direction:

4  
5 
$$X: \triangleleft A \equiv B \triangleleft C \triangleleft D \equiv E \triangleleft$$

6 The symbols A, B, C, D, and E represent a string of "icon designators" as  
7 discussed in Yang at, for example, col. 6, line 28-31. The icon designators A, B,  
8 C, D, and E in the string are in a horizontal direction as indicated by the "X"  
9 horizontal coordinate designation and by their general orientation in both Figures  
10 12 and 13.

11 These horizontal entities do not have a "unique rank as compared to the  
12 ranks of other entities in the horizontally linked list" as recited in Applicant's  
13 claim 1. For example, it is clear that horizontal entities A and B have the same or  
14 equal ranks. It is clear that horizontal entities D and E also have the same or equal  
15 ranks. At col. 11, lines 23-39, Yang discusses segregating these horizontal entities  
16 or symbols into "equivalent classes" according to two rules as follows:

17 Case 1: If, in the extended 1-D string of the video query 555, the icon  
18 corresponding to the respective sequence is preceded by the operator  
19 " $\triangleleft$ " or "?" and followed by the operator " $\triangleleft$ " or "?" then all symbols in  
the respective sequence are in the same equivalent class.

20 Case 2: Otherwise, those symbols with equal ranks are in an equivalent  
21 class; those symbols with different ranks are in different classes.

22 For purposes of applying these rules, the 1-D extended string of the  
23 video query X is presumed to begin and end with the " $\triangleleft$ " operators as  
follows:

24 
$$X: \triangleleft A \equiv B \triangleleft C \triangleleft D \equiv E \triangleleft$$
  
25

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1 It is clear based on the rules Yang uses to segregate the horizontal entities  
2 or symbols that symbols in the same equivalent class have the same rank, and that  
3 "those symbols with different ranks are in different classes". Thus, horizontal  
4 entities A and B have the same or equal ranks, as do horizontal entities D and E.  
5 Because Applicant's claim 1 recites "each entity in the horizontally linked list  
6 having a unique rank as compared to the ranks of other entities in the horizontally  
7 linked list", Yang does not anticipate claim 1.

8 It is therefore clear that Yang does not teach all of the elements of  
9 Applicant's claim 1. Because Yang does not disclose all elements of Applicant's  
10 claim 1, Yang does not anticipate claim 1. Applicant therefore respectfully  
11 requests withdrawal of the §102(b) rejection of claim 1.

12 **Claims 2-9** depend directly or indirectly from claim 1, and thereby  
13 incorporate each of the elements of claim 1. Therefore, claims 2-9 are allowable  
14 by virtue of at least this dependency from allowable claim 1, in addition to further  
15 elements recited therein that are not taught by Yang. Applicant therefore  
16 respectfully requests withdrawal of the §102(b) rejection of claims 2-9.

17 Applicant's independent **claim 10** recites in part:

18 in response to determining that the particular entity is present  
19 within a vertically linked list linking in at least one direction a  
20 corresponding subset of the plurality of entities having an identical  
rank, the corresponding subset including the particular entity, *delinking  
the particular entity from the vertically linked list*;

21 in response to determining that the particular entity is present  
22 within a horizontally linked list linking at least a subset of the plurality  
23 of entities in at least in a descending rank order direction, the subset  
including the particular entity, *delinking the particular entity from the  
horizontally linked list*; and,

24 in response to determining that an array entry of a plurality of  
25 array entries of an array over which the plurality of ranks are distributed  
points to the particular entity, *adjusting the array entry to point to one*

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*of null and another one of the plurality of entities.*

(emphasis added).

Regarding claim 10, the Office refers again to Yang at col. 10, line 10 through col. 11, line 39 to support the assertion that Yang teaches the above-recited elements of claim 10. However, Yang does not discuss or mention anything about these elements of claim 10. For example, there is no mention in Yang regarding *"delinking the particular entity from the vertically linked list"*, *"delinking the particular entity from the horizontally linked list"*, or *"adjusting the array entry to point to one of null and another one of the plurality of entities"*. The Office is invited to specifically point out to Applicant where Yang teaches the above elements of claim 10. The elements of Applicant's claim 10 are not taught or implied in any way by Yang.

Because Yang does not disclose all elements of Applicant's claim 10, Yang does not anticipate claim 10. Applicant therefore respectfully requests withdrawal of the §102(b) rejection of claim 10.

Claims 11-18 depend directly or indirectly from claim 10, and thereby incorporate each of the elements of claim 10. Therefore, claims 11-18 are allowable by virtue of at least this dependency from allowable claim 10, in addition to further elements recited therein that are not taught by Yang. Applicant therefore respectfully requests withdrawal of the §102(b) rejection of claims 11-18.

Applicant's independent claim 19 recites in part:

*adjusting the array entry having the corresponding range of ranks into which the rank of the new entity lies to point to the new entity in response to determining that the array entry currently points to null;*

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1 *adjusting the array entry* having the corresponding range of  
2 ranks into which the rank of the new entity lies *to point to the new*  
3 *entity in response to determining that the array entry current points to*  
4 *an entity having a rank less than the rank of the new entity;*

5 *linking the new entity into a vertically linked list* linking in at  
6 least one direction a corresponding subset of the plurality of entities  
7 having an identical rank, *in response to determining that the rank of*  
8 *the new entity is equal to the rank of any other entity within the*  
9 *plurality of entities; and,*

10 otherwise, *linking the new entity into a horizontally linked list*  
11 linking at least a subset of the plurality of entities in at least a  
12 descending rank order direction, *each entity in the horizontally linked*  
13 *list having a unique rank as compared to the ranks of other entities in*  
14 *the horizontally linked list.*

15 (emphasis added).

16 Regarding claim 19, the Office refers again to Yang at col. 10, line 10  
17 through col. 11, line 39, in addition to Yang's claims 1 and 4 to support the  
18 assertion that Yang teaches the elements of Applicant's claim 19. However,  
19 nowhere in Yang at col. 10, line 10 through col. 11, line 39, or in Yang's claims 1  
20 or 4 is there any mention of numerous elements of Applicant's claim 19. For  
21 example, Yang does not teach, mention, or imply "*adjusting the array entry . . . to*  
22 *point to the new entity in response to determining that the array entry currently*  
23 *points to null*" or "*adjusting the array entry . . . to point to the new entity in*  
24 *response to determining that the array entry current points to an entity having a*  
25 *rank less than the rank of the new entity.* Furthermore, Yang does not teach,  
mention, or imply "*linking the new entity into a vertically linked list . . . in*  
*response to determining that the rank of the new entity is equal to the rank of*  
*any other entity within the plurality of entities*". The Office is invited to  
specifically point out to Applicant where Yang teaches the above elements of

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1 claim 19. These elements, and others of Applicant's claim 19, are not taught or  
2 implied by Yang in any way.

3 Moreover, the element of Applicant's claim 19 which recites "*linking the*  
4 *new entity into a horizontally linked list . . . each entity in the horizontally linked*  
5 *list having a unique rank as compared to the ranks of other entities in the*  
6 *horizontally linked list*", parallels the element of Applicant's claim 1 as argued  
7 above. That argument briefly restated here, is that Yang's horizontal entities (i.e.,  
8  $X: \langle A \equiv B \langle C \langle D \equiv E \langle$ ), do not have a "unique rank as compared to the ranks of  
9 other entities in the horizontally linked list" as recited in Applicant's claim 19.

10 For these and other reasons, it is clear that Yang does not teach all of the  
11 elements of Applicant's claim 19. Because Yang does not disclose all elements of  
12 Applicant's claim 19, Yang does not anticipate claim 19. Applicant therefore  
13 respectfully requests withdrawal of the §102(b) rejection of claim 19.

14 Claims 20-22 depend directly or indirectly from claim 19, and thereby  
15 incorporate each of the elements of claim 19. Therefore, claims 20-22 are  
16 allowable by virtue of at least this dependency from allowable claim 19, in  
17 addition to further elements recited therein that are not taught by Yang. Applicant  
18 therefore respectfully requests withdrawal of the §102(b) rejection of claims 20-  
19 22.

## 20 Conclusion

21 All pending claims, 1-22, are believed to be in condition for allowance.  
22 Applicant respectfully requests reconsideration and prompt issuance of the present  
23 application. Should any issue remain that prevents immediate issuance of the  
24 application. Should any issue remain that prevents immediate issuance of the  
25 application.

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1 application, the Examiner is encouraged to contact the undersigned attorney to  
2 discuss the unresolved issue.  
3  
4

Respectfully Submitted,

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